

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

REMARKS

Claims 1-22 are all the claims pending in the application. Claim 15 is amended. No new matter is introduced.

Rejections under 35 USC 101

The Examiner rejected claims 15-17 under 35 U.S.C. 101 as being allegedly directed to non-statutory subject matter. In response, Applicant amends the independent claim 15 and respectfully traverses this rejection in view of the aforesaid amendment and further in view of the following arguments. Specifically, the Applicant's amendment is believed to overcome the Examiner's rejection. Applicant further respectfully submits that the rejection of claims 16 and 17 is also overcome by the aforesaid amendment, because claim 16 and 17 are patentable by definition, by virtue of their dependency on the patentable claim 15.

Rejections under 35 USC 103(a)

The Examiner rejected claims 1-22 under 35 U.S.C. 103(a) as being allegedly unpatentable over Raab et al. (U.S. patent No. 5,751,967) in view of Schumacher (U.S. patent No. 6,735,765). In response, Applicant respectfully traverses this rejection in view of the following arguments.

Applicant respectfully submits that Raab et al. and Schumacher, taken singly or in combination, do not teach or suggest limitations recited in the independent claims 1, 10, 15 and 18-22. Specifically, neither Raab et al. nor Schumacher, nor any combination thereof, teach a virtual local area network (VLAN)-aware network storage device which in itself contains functionality to: 1) map virtual volumes to different VLANs; and 2) control access to those

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

virtual volumes in accordance with VLAN configuration. In Raab et al., all access control functions associated with VLAN configuration are performed exclusively by the network control engine NCE 210 (Raab et al., Fig. 2), and not by the network storage devices themselves. To the extent that Raab et al. discloses any network storage devices, these are “dumb” devices, which store no information on the VLAN configuration. The second applied reference, Schumacher, is not even related to the network storage and VLAN technologies and, therefore, cannot be used to supply the missing teaching.

The Raab et al. reference has been addressed in detail in Applicant’s amendment filed on January 11, 1006. Specifically, Raab et al. discloses a system for automatically configuring a network device to support a virtual network. With reference to Fig. 4 of Raab et al., the system of Raab et al. includes a number of VLAN devices 410 and a network control engine NCE 200 executing a virtual auto-configuration daemon (VAC daemon) process 331 which is responsible for managing all the VLAN devices 410 in the switched network. The organization of the daemon process 331 is shown in detail in Fig. 4 of Raab et al. As can be clearly seen from Fig. 4, both the configuration and the enforcement of VLAN policies are the functions of the daemon process executing on the network control engine NCE 200 and not of the VLAN devices 410. All VLAN configuration information, including any device to VLAN mappings are managed by the policy configuration module 402 of the daemon process 331, see col. 8, ln. 36-67. Likewise, the enforcement of the VLAN policies as well as controlling access to various VLAN devices, including any storage devices, is conducted by the configuration enforcement module 405 and not by VLAN devices 401. Thus, in Raab et al. the VLAN devices 401, do not have the

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

functionality to manage any VLAN to storage mappings and cannot themselves control access to storage resources available on VLAN(s). Thus, Raab et al. does not disclose a storage apparatus, which itself is capable of controlling access to storage based on VLAN configuration.

In the Office Action, the Examiner expressly admits that Raab et al. does not teach or suggest the claimed features of the invention, wherein least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information, which includes a correspondence between at least one segment of a virtual local area network (VLAN) connectable by the network interface and at least one virtual volume of the at least one storage device

The Examiner appears to use the second cited reference, Schumacher, to supply the admittedly missing teaching. Schumacher discloses a technique for sharing data between two operating systems. In accordance with the disclosed technique, a volume is provided in a data storage device. The provided volume is a portion of memory within the data storage device and is accessible by a source operating system residing on a source computer and a target operating system residing on a target computer. Data is generated within the provided volume using first operating system. The generated data is in a format that is readable by second operating system, see Schumacher, Abstract. However, Schumacher is entirely silent about VLAN and about controlling access to storage based on VLAN configuration. Therefore, while Schumacher discloses a storage controller 24 shown in Figs. 2 and 3 of Schumacher, this storage controller does not support VLAN and, therefore, is not capable of controlling access to the at least one virtual volume based upon the configuration information, which includes a correspondence

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

between at least one segment of a virtual local area network (VLAN) connectable by the network interface and at least one virtual volume of the at least one storage device, as specifically recited in independent claim 1. Moreover, Schumacher fails to teach or suggest the claimed configuration information, which includes the VLAN to storage correspondence data. Therefore, the claimed feature of the invention, wherein the least one of the processor or the network interface control access to the at least one virtual volume based upon the configuration information, which includes a correspondence between at least one segment of a virtual local area network (VLAN) connectable by the network interface and at least one virtual volume of the at least one storage device is not taught by Raab et al., Schumacher, or any combination thereof. For this reason, independent claims 1 are patentable over the combination of Raab et al. and Schumacher.

In addition, in disregard of Applicant's arguments contained in the amendment filed on January 11, 1006, which the Examiner has not addressed in the present Office Action, the Examiner continues to read the components of the claimed "storage apparatus" on the components of the network control engine NCE 210 shown in Fig. 2 of Raab et al., see col. 5, ln 20-23. Applicant respectfully submits that such an interpretation of Raab et al. is improper. The network control engine NCE 200 executes a Virtual Auto Configuration (VAC) daemon 331 for managing and enforcing various VLAN policies and does not perform storage functions for other network entities. Therefore, the NCE 210 is not a storage apparatus.

Applicant respectfully calls the Examiner's attention to the portion of Raab et al. located at col. 5, ln 20-23. In that portion, Raab et al. clearly states that it is the NCE 210 that is shown

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

in Fig. 2 and not a network storage device. The NCE 210 is not a network storage apparatus and its storage device 207 is not accessible via a network by other network entities. In fact, Raab et al. is not related to networking storage technology and, therefore, never teaches a storage apparatus having a storage device accessible over a network by other network entities.

On the other hand, independent claim 1 specifically recites the storage device as being accessible over a network by other network entities. Thus, the network control engine NCE 200 is not the claimed storage device because its storage unit 207 is not accessible over a network by other network entities for storage operations. Therefore, Raab et al. fails to teach or suggest the claimed at least one storage device accessible over a network by at least one network entity. As the Examiner would appreciate, the second reference applied by the Examiner, Schumacher, does not even mention the claimed storage device accessible over a network by at least one network entity. Thus, Schumacher does not remedy the aforesaid deficiency of Raab et al.

If the Examiner continues to insist that Raab et al. discloses a storage apparatus having at least one storage device accessible over a network by at least one network entity, the Examiner must point out where that specific teaching appears within Raab et al. "[W]hen the PTO asserts that there is an explicit or implicit teaching or suggestion in the prior art, it must indicate where such a teaching or suggestion appears in the reference." In re Rijckaert, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (citing In re Yates, 663 F.2d 1054, 211 USPQ 1149, 1151 (CCPA 1981)). So far, the Examiner has failed to do so. Therefore, independent claim 1 is patentable over Raab et al., Schumacher or any combination thereof.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

Applicant further respectfully submits that all of the above patentability arguments made by Applicant with respect to claim 1, are equally applicable to the independent claims 10, 15 and 18-22, which generally recite a storage apparatus which itself contains 1) storage device accessible over a network by at least one network entity as well as functionality operable to: 2) map virtual volumes to different VLANs; and 3) control access to those virtual volumes in accordance with VLAN configuration information. As stated above, neither Raab et al. nor Schumacher, nor any combination thereof teach or suggest a system incorporating the claimed limitations. Therefore, claims 10, 15 and 18-22 are also patentable over the combination of Raab et al. and Schumacher.

With respect to the rejection of dependent claims 2-9, 11-14, 16 and 17, while continuing to traverse the Examiner's characterization of the teachings of the references used by the Examiner in rejecting these claims, Applicant respectfully submits that these claims are patentable by definition, by virtue of their dependence upon the patentable independent claims 1, 10, and 15.

Finally, the Examiner's reasoning for combining teachings of Raab et al. and Schumacher is flawed. In the Office Action, the Examiner states that these references should be combined because "it would have provided specific functions for extracting database information from one location in memory and placing the extracted information thereby enable data sharing." Applicant is puzzled by the Examiner's reasoning in light of the fact that neither the claimed invention, nor Raab et al., nor the proposed combination is directed to a database. It appears that the Examiner simply relies on impermissible hindsight to pick and choose elements of prior art

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

references using the claimed invention as a template. As the Examiner well knows, this is not allowed by law. When a prior art reference requires a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and, thus the obviousness, of making the combination. *Uniroyal, Inc. v. Rudken-Wyley Corp.*, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). In the Office Action, the Examiner has failed to identify the requisite reason suggested by the prior taken as a whole and, instead, impermissibly relies on hindsight gleaned from the invention itself. This is an additional reason why claims 1-22 are patentable.

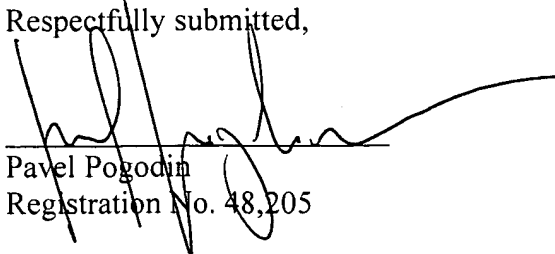
Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Atty. Docket No.: CA1469 (HAL 200)
PATENT APPLICATION

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No.: 09/996,308

MOUNTAIN VIEW OFFICE

23493

CUSTOMER NUMBER

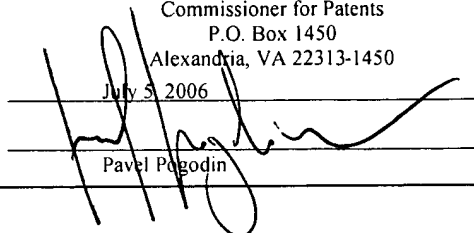
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